.NET PROGRAMMING
SQL PROGRAMMING AND DBMS

DATA MANIPULATION LANGUAGE

Chia Yuen Kwan

isscyk@nus.edu.sg

Objectives

- Upon completion of this lesson, students should be able to use SQL command syntax for:

  - Inserting, updating or deleting rows of data from the table.
  - Selectively or throughout the whole table.

INSERT

- Function of an INSERT Command:

  - Insert row(s) into a table

INSERT Command

```
INSERT INTO  table-name   (column-name,),
           | VALUES   ([constant, NULL],)
     or
           | SELECT retrieval condition
```

3

INSERT Statement

- **Single-Row Insert (Without Column Names)**

  INSERT INTO ProducerWebSite
  VALUES ('Columbia', 'www.Columbia.com')

  - a record to be inserted into the table without specifying the columns to be inserted.
  - The values to be added represents of all the columns in that Table.

4

INSERT Statement

- **Single-Row Insert (With Column Names)**

> INSERT INTO GoodCustomers
> (CustomerID,CustomerName,Address)
> VALUES (9000,'Grace Leong','15 Bukit Purmei Road, Singapore 0904')

- a single row of record (with 3 columns) to be inserted into the GoodCustomers Table

5

INSERT Statement

- **Insert using a Query (INSERT INTO… SELECT… FROM…)**

> INSERT INTO GoodCustomers
> (CustomerID,CustomerName,Address,PhoneNumber, MemberCategory)
> SELECT
>   CustomerID,CustomerName,Address,PhoneNumber, MemberCategory
> FROM Customers
> WHERE MemberCategory in ('A','B')

- Allows the insertion of records from one table to another table.
- The data types for both columns must be similar.

6

UPDATE

- Function of an Update Command:

    - *Changes data in one or more rows of a table*

UPDATE Command

```
UPDATE   table-name
    SET   (column-name = expression,),
    WHERE search-condition
```

UPDATE Statement

- Example:
    - **Selective Update**
        ```
        UPDATE GoodCustomers
        SET PhoneNumber = 7775588
        WHERE CustomerName = 'Grace Leong'
        ```

    - **Update All Rows**
        ```
        UPDATE GoodCustomers
         SET PhoneNumber = 7775588
        ```

    - **Update with Subquery**
        ```
        UPDATE GoodCustomers
         SET PhoneNumber = 7775588
        WHERE CustomerID in (SELECT CustomerID FROM Customers
                        WHERE MemberCategory = 'B')
        ```

DELETE

- Function of a Delete command:

  - *Removes one or more rows from a table*

  - Note that DELETE is a dangerous command.
    Once the record (ie Row) is deleted, it cannot be
    undeleted.

  DELETE Command

  ```
  DELETE FROM  table-name
      {WHERE  search-condition}
  ```

DELETE Statement

- Example:
  - **Delete Selected Rows (From the Table Good Customers that fits the condition)**
    DELETE FROM GoodCustomers
    WHERE MemberCategory = 'B'

  - **Delete All Rows (from the Table)**
    DELETE FROM GoodCustomers

  - **Delete Rows that satisfy certain conditions (with Subquery)**
    DELETE FROM GoodCustomers
    WHERE CustomerID in
        (SELECT CustomerID FROM Customers
                WHERE MemberCategory = 'A')

- DML (Data Manipulation Language)
  - Insert, Update, Delete Command